

AMENDMENTS TO THE CLAIMS

1-13. (Cancelled)

14. – 18. (canceled)

19. (Canceled)

20. – 24. (Canceled)

25. - 31. (Canceled)

32. (Canceled)

33. (Withdrawn, currently amended) A method for measuring the intracellular ATP comprising: extracting ATP from a cell sample in the presence of a surfactant,
adding a luminescence reagent containing the surfactant resistant luciferase of Claim 1435, 37 or 40 for a time and under conditions suitable to produce the emission of light, and detecting or measuring the emission of light.

34. (Withdrawn, currently amended) A method for measuring the intracellular ATP comprising: extracting ATP from a cell sample in the presence of a surfactant,
adding a luminescence reagent containing the surfactant resistant luciferase of Claim 3235, 37 or 40 for a time and under conditions suitable to produce the emission of light, and detecting or measuring the emission of light.

35. (Currently amended) A luciferase protein that retains more than 85% of its luciferase activity in 0.1% benzalkonium chloride compared to its luciferase activity in the absence of benzalkonium chloride produced by a process comprising:

culturing a bacterium comprising a polynucleotide obtained by amplifying a template nucleic acid prepared from GENJI firefly, or HEIKE firefly, ~~North American firefly, Russian firefly, *Pyrophorus plagiophthalmus*, *Arachnocapa luminosa*, or Rail worm~~ using the oligonucleotide primers having the sequence of SEQ ID Nos: 1 and 2 that encodes a luciferase protein that retains more than 85% of its luciferase activity in 0.1% benzalkonium chloride compared to its luciferase activity in the absence of benzalkonium chloride, and recovering from the culture said luciferase protein.

36. (Canceled)

37. (Currently amended) ~~The luciferase protein of claim 14, A firefly luciferase having resistance to a surfactant,~~

wherein said luciferase retains at least 85% of its activity in the presence of 0.1% surfactant,~~in which the said luciferase comprises comprising the amino acid sequence PXAVVVLX₄₉₀GKXMTE, in which X₄₉₀ is an amino acid other than glutamic acid and X is any amino acid.~~

38. – 39. (Canceled)

40. (Currently amended) The luciferase of claim 35, wherein the luciferase comprises the amino acid sequence ~~PXAVVVLX₄₉₀KGKXMTE, PGAVVVLX₄₉₀KGKSMTE,~~in which X₄₉₀ is an amino acid other than glutamic acid ~~and X is any amino acid.~~

41. (Canceled)

42. (New) The luciferase of claim 37, wherein the luciferase comprises the amino acid sequence PGAVVVLX₄₉₀KGKSMTE, in which X₄₉₀ is an amino acid other than glutamic acid.